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The Impact of Corporate Governance Mechanisms on Audit quality: Evidence from Jordan

اثر آليات الحاكمية المؤسسية على جودة التدقيق في الأردن

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Committee Decision

The Impact of Corporate Governance Mechanisms on Audit Quality: Evidence from Jordan

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Last, but certainly not least, to my family. There are no words to thank you all for your dedicated support and help throughout this long journey. Your love and encouragement have given me strength, and the completion of this thesis is your success as well as mine. May Allah bless you all.

Dedication

To

My dear departed grandparents

My dearest parents

And my whole family and friends

For their love, support and encouragement.

I would also like to remember with gratitude my professors and colleagues at An-Najah National University.

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Abstract

Dwekat, Aladdin Muhaned. The Impact of Corporate Governance Mechanisms on Audit Quality: Evidence from Jordan
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The aim of this study is to examine the impact of corporate governance mechanisms on audit quality in Jordan. The sample included of 63 manufacturing companies listed on the Amman Stock Exchange. Relevant data were collected from the ASE website and from the annual reports of the sampled companies. Audit quality was assessed using three proxies: audit firm size, audit fees, and auditor specialization. To achieve the objectives of the study, multiple regression analysis was used. Results of the analysis revealed that companies with a high percentages of institutional ownership tend to hire a high quality auditor (Big4 auditing firm), and indicated a significant positive relationship between institutional ownership ratio and audit fees. In addition, results showed a significant positive relationship between total asset and both auditor specialization and audit fees. In contrast, the existence of the audit committee negatively affects the audit quality as measured by auditor specialization. Furthermore, the board of directors' size, director ownership, ownership concentration, percentage of board independence, CEO duality and financial leverage were found to have no effect on audit quality.

Based on the results of the study, the study recommends that regulators need to encourage companies for more compliance with corporate governance code. Companies need to pay more attention when formulating audit committees, and ensure that audit committees include members with a good experience and knowledge in financial and accounting practices.

Key words: **Corporate governance, audit quality, manufacturing firms, Amman Stock Exchange.**

ملخص الدراسة

دويكات, علاء الدين مهند. ***أثر آليات الحاكمية المؤسسية على جودة التدقيق في الأردن*** **, رسالة ماجستير بجامعة اليرموك, 2014.**

إشراف: أ. د. ميشيل سويدان

هدفت هذه الدراسة إلى اختبار اثر آليات الحاكمية المؤسسية على جودة التدقيق للشركات الصناعية الأردنية المدرجة في بورصة عمان. و قد تم الحصول على بيانات هذه الدراسة من خلال موقع بورصة عمان و التقارير السنوية للشركات الصناعية للعام 2012 لعينة مكونة من 63 شركة. وقد تم قياس جودة التدقيق من خلال حجم شركة التدقيق, وأتعاب التدقيق, و التخصص في صناعة العميل.و لتحقيق أهداف الدراسة تم استخدام أسلوب تحليل الانحدار المتعدد.

وقد توصلت الدراسة إلى أن الشركات التي تحتوي على نسبة ملكية مؤسسية عالية تميل إلى تعيين احد المكاتب الأربعة الكبار في التدقيق, وتوصلت إلى وجود علاقة إيجابية ذات دلالة إحصائية بين نسبة الملكية المؤسسية وأتعاب التدقيق بالإضافة إلى وجود علاقة إيجابية ذات دلالة إحصائية بين إجمالي الأصول و التخصص في صناعة العميل وأتعاب التدقيق, وتوصلت أيضا إلى وجود علاقة سلبية ذات دلالة إحصائية بين وجود لجنة تدقيق والتخصص في صناعة العميل و على النقيض من ذلك فلم يظهر هنالك أثر لحجم مجلس الإدارة, و ملكية المجلس, وتركيز الملكية, و استقلالية مجلس الإدارة, و الجمع بين منصبي رئيس مجلس الإدارة و المدير التنفيذي, و الرافعة المالية على جودة التدقيق. بالاعتماد على هذه النتائج توصي الدراسة الجهات المعنية بتشجيع الشركات الصناعية بالالتزام أكثر بتعليمات الحاكمية المؤسسية,ويجب على الشركات أن تعير اهتماما اكبر عند تشكيل لجان التدقيق، والتأكد من أن أعضاء لجان التدقيق يتمتعون بخبرة ومعرفة كافية في الممارسات المالية والمحاسبية

كلمات مفتاحيه: الحاكمية المؤسسية, جودة التدقيق, الشركات الصناعية ، بورصة عمان.

CHAPTER ONE: INTRODUCTION

1.1. Introduction
1.2. Problem statement
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CHAPTER ONE: INTRODUCTION

1.1. Introduction

Corporate governance has become an important topic in recent years, in both practice and academic literature (Abdelkarem, 2013). The weakness of corporate governance is the most important causative factor implicated in the corporate failures of 2001/2002 and their consequences (Adeyemi and Temitope, 2010). Thus, to ensure a competitive position, sustainability, to attract capital and to combat corruption, companies need to take in consideration good governance institution (Abdelkarem, 2013).

Adeyemi and Temitope, (2010) consider that the recent corporate financial scandals have highlighted the role of corporate governance mechanisms. The conflict of interest between shareholders (principal) and mangers (agent) drawn in agency theory, where shareholders lack trust of their mangers (agent) because of asymmetric information and different motives therefore, the principal need to put in place mechanisms, such as the audit and corporate governance(ICAEW, 2005). More precisely, the role of external auditors who are considered guarantors for the reliability of financial reporting. In fact external auditors, who are characterized by their independence and competence, play a vital role in promoting confidence, credibility and enhancing trust of financial statement (Zengin, 2013).

The choice of high quality auditor seems to be very important. In most cases it is the responsibility of the shareholders. Some companies require a certain

level of quality for the certification of annual accounts and tend to choose high quality auditor. Other companies are not interested in the auditor quality issue (Makni *et al*., 2012).

Effective corporate governance and audit quality are very important components of every company, especially for big companies. This is vital to ensure the credibility of internal control and monitor the financial reporting system. Each element complements the other. Effective corporate governance mechanisms assume the provision of high quality audit services for the company. High quality audit firms are constantly attempting to enhance the quality of corporate governance mechanisms of their clients (Abdullah *et. al*., 2008).

Therefore, the purpose of this study is to investigate the impact of corporate governance mechanisms, on audit quality in the Jordanian manufacturing companies listed on the Amman Stock Exchange (ASE).

1.2. Problem statement

The weakness of corporate governance is one of the main factors blamed for the large-scale corporate failures in 2002 (Norwani et al., 2011) and recent financial crisis in 2008 (Singh, 2013). There is a lot that can be done to improve the integrity of financial reporting through greater accountability, the restoration of resources devoted to audit function, and better corporate governance policies (Saudagaran, 2003).

Although some progress has been made in Jordan, however, the auditing profession and corporate governance require additional scrutiny and development from researchers, regulators and other relevant parties. Since it is imperative to identify the impact of corporate governance mechanisms on audit quality, thus, the main question this study seeks to answer is:

Do corporate governance mechanisms (ownership concentration, percentage of director ownership, percentage of institutional ownership, percentage of independent directors, audit committee, duality of CEO, size of board) have any relationship with the audit quality of Jordanian manufacturing company listed on ASE?

1.3. The objectives of the study

The objective of this study is examining the impact of corporate governance mechanisms on audit quality in Jordanian manufacturing companies listed on the ASE during the year 2012.

The corporate governance mechanisms examined include, ownership concentration, board of director's ownership, institutional ownership, independent directors, audit committee, duality of CEO, and size of board.

1.4. The importance of the study

Audit quality has been extensively investigated by researchers in developing countries. In Jordan, most of the studies focus on the determinants of audit quality (See for example: Al-Omari *et al*., 2004; Al-Nawaiseh, 2006 and Abu Issa, 2011). To the best of the researcher's knowledge only Zureigat, (2011)

study focused on the impact of corporate governance, including ownership structure, on audit quality.

The current study is expected to contribute to the literature on the determinants of audit quality by providing empirical evidence on the impact of corporate governance mechanisms on audit quality in an emerging economy, Jordan. Furthermore, understanding the impact of corporate governance mechanisms on audit quality may assist policy-makers in revising the items (general guidelines and requirements) that relate to the board composition, ownership structure and audit committee in the corporate governance code and codes related to audit firms in Jordan.

1.5. Structure of the Study

Chapter 1: Introduction

This chapter provided an overview of the study, including a brief introduction, problem statement, objectives and importance of the study.

Chapter 2: Theoretical framework

This chapter discusses the concepts of corporate governance, agency theory, audit quality and the relationship between audit quality and corporate governance.

Chapter 3: Literature review and development of hypotheses

This chapter provides a review of the empirical literature on corporate governance and audit quality. Also, it presents the hypotheses to be tested in the current study.

Chapter 4: Methodology

This chapter describes the study population and sample, data collection methods and procedures, variables and model to be tested.

Chapter 5: Data analysis and hypotheses testing

This chapter presents the empirical results of testing the proposed models, and the result of testing the hypotheses.

Chapter 6: Conclusions

This final chapter presents the conclusions and implications of the study. It also discusses suggestions for future research.

CHAPTER TWO: THEORETICAL FRAMEWORK

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CHAPTER TWO: THEORETICAL FRAMEWORK

2.1. Introduction

The current study aims to investigate the impact of corporate governance mechanisms on audit quality in manufacturing Jordanian companies listed on the Amman stock exchange. This chapter reviews the theoretical framework related to corporate governance and audit quality and their inter-relationship.

2.2. Definition of corporate governance

There is no single, specific, generally acceptable definition for corporate governance (Solomon, 2007). However, among the most cited definitions of corporate governance is the one provided by the Cadbury Report (1992: p15) which defines corporate governance as "a system by which companies are directed and controlled". This definition highlights the roles of the main players in an organization, namely shareholders, board of directors and auditors. As cited in the Cadbury Report (1992), the shareholders are responsible for appointing directors and auditors and for ensuring that an appropriate governance system is in place. The directors' function is associated with how the firm is governed, while the auditors' main role is to provide an independent check on financial statements to shareholders.

Shleifer and Vishny (1997: p737) describe corporate governance as "dealing with the ways in which financiers of corporations assure themselves of getting a reasonable return on their investment". They found that there are many factors which may control management discretion, such as legal protection of

investor rights and concentrated ownership, the purpose of these precautions being to safeguard the financiers' return on their investment.

Denis's (2001: p192) definition of corporate governance is consistent with that given in the Cadbury Report (1992); he states that corporate governance "induces self-interested managers (the controllers) to maximize the value of the residual cash flows of the firm on behalf of its shareholders (the owners)". Other popular definitions of corporate governance are provided by the Organization for Economic Co-operation and Development (OECD, 2004) and Solomon (2007). The OECD defines corporate governance as "a set of relationships governing the various members of a corporation". It involves a set of relationships between a company's management, its board of directors, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Solomon (2007: p14) defines corporate governance as a "system of checks and balances, both internal and external, which ensures that companies discharge their accountability to all their stakeholders and act in a socially responsible way in all areas of their business activity".

These varied definitions and explanations of corporate governance exist because the various authors view corporate governance from diverse perspectives and through different theoretical frameworks. For example, the definitions of corporate governance outlined by Cadbury (1992), Shleifer and

Vishny (1997), and Denis (2001) seem to agree that corporate governance is associated with ownership and control and that aims at maximizing shareholders' wealth. These definitions are influenced by agency theory. On the other hand, the Solomon (2007) and OECD (2004) definitions are consistent with stakeholder theory which indicates that to maximize shareholder wealth, social and environmental issues are of significant importance to the firm. Thus, both insiders (such as employees, management) and outsiders (such as suppliers, customers, the public, governments) of any firm may affect or be affected by the firm's actions. These groups of individuals are called stakeholders (Freeman, 1984).

Given the fact that the current study examines the effect of the board of directors, the audit committee, majority shareholders, and institutional investors on audit quality, therefore corporate governance is viewed by this study as a monitoring system of checks and balances to assure that the interests of shareholders are safeguarded. Such a view can be expressed appropriately in agency theory.

2.3. Agency theory

The proposition of agency theory was studied by Jensen and Meckling (1976) by introducing agency cost. They use the concept of agency cost to explain issues related to the separation of ownership from control in a corporation**.** The definition of agency theory is concerned with any conflict of interest that may exist between principals and agents. A principal (shareholder) assigns the

power of the decision maker to an agent (manager) while the agent executes their duties on behalf of the principal (Jensen and Meckling, 1976). Such a problem leads to information asymmetries between managers and owners. The existence of information asymmetries results in two major agency problems, namely, moral hazard and adverse selection problems.

According to agency theory, when managers or agents are inspired by external motivations, the principals have to identify ways to motivate agents and to ensure that they act in the best interest of the principals (Sundaramurthy and Lewis, 2003). Jensen and Meckling (1976) suggest however, that agency costs can be an alternative way to reduce agency conflict and they define agency cost as a combination of monitoring and bonding costs and residual loss. Monitoring costs are associated with mechanisms that control the agents' behaviour (the roles played by the board of directors) and the appointment of appropriate agents, (external auditors), while bonding cost is associated with contracting to ensure that agents always make decisions that support the principal's wealth. Furthermore residual loss is the agency loss associated with the reduction in principals' wealth that results from an imperfect alignment of interest between agents and principals (Jensen and Meckling, 1976).

Fama (1980) and Shilefer and Vishny (1986) claim that corporate governance is a system and assert that corporate governance mechanisms decrease opportunistic managerial behaviour, also noting that there are internal and

external corporate governance mechanisms that can minimize such agency costs.

Thus, corporate governance mechanisms such as audit committees, boards of directors and external auditors, enable shareholders to monitor the actions of managers. Weak monitoring may encourage managers to pursue their own interests by activities such as earning management while effective corporate monitoring can reduce this type of misleading behaviour (Basiruddin, 2011).

2.4. Corporate Governance Principles

Corporate governance is a group of balancing mechanisms between the needs of shareholders and management, to ensure that the company is managed on the right track to achieve company goals. In 1999, the Organization for Economic Co-Operation and Development (OECD) issued five principles of corporate governance which were reviewed in 2004 with the aim of improving the legal and institutional framework by which companies are controlled. The principles of corporate governance are general rules which have been developed by OECD as a guideline which could be used by different countries and markets. These principles reflect the important relationship between the three key players of the firm: shareholders, board of directors and management (Wheelen and Hunger, 2004).

These principles are (OECD, 2004):

1-*"Rights of Shareholders and Key Ownership Functions":* The management should develop mechanisms that protect and guarantees the rights of shareholders.

2-*"Equitable Treatment of Shareholders":* All shareholders should be treated equally, including minority and foreign shareholders.

3-"*Role of Stakeholders in Corporate Governance":* Good corporate governance recognises that it is in the long-term interest of the corporation to respect the rights and interests of the stakeholders.

4-*"Disclosure and Transparency":* There is a need to ensure timely and accurate disclosure of all material matters regarding the corporation including financial aspects, performance, ownership and governance.

5-*"The Responsibilities of the Board":* The board is a key to the strategic guidance of the company and the effective monitoring of the management. It should be fully able to undertake its tasks and responsibilities and be fully accountable to shareholders.

2.5. Corporate Governance in Jordan

There is a number of legislations and rules in Jordan which are concerned with corporate governance principles, the most important of these being the Companies law (N0.22\1997), Insurance supervision law (No.33\1999), Banking law (N0.28\2000), Securities' law (No.76\2002) and other laws and regulations directly or indirectly related to corporate governance in Jordan.

In 2005, the Jordan Securities Commissions (JSC) framed the concept of corporate governance by issuing a Corporate Governance Code for corporations listed on ASE. The code became obligatory on 1\1\2009. The purpose of this code is to regulate the company's inter-departmental relationships and define their responsibilities with regard to safeguarding the shareholders' interests. This code is determined by the Securities law, company law and OECD principles (JSC, 2009).

Recently, the Companies Control Department issued a corporate governance code for private shareholder companies, limited liability companies and unlisted public companies. This code is based upon the "Comply-or-Explain principles" (Companies Control Department, 2013).

2.6 Audit quality

2.6.1 Definition of audit quality

The most common definition for audit quality is provided by DeAngelo, (1981: p186). She defined audit quality as "the market assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system and (b) report the breach". This definition in the workplace (market) means the ability of the auditor to detect any material misstatement and document this misstatement based on an appropriate audit opinion. Watts and Zimmerman (1986) clarify DeAngelo`s definition, where the first part of the definition refers to auditor competence and the second part refers to an auditor's independence. In other words, according to Watts and Zimmerman,

any factors that are related to a lack of auditor competence or independence are able to influence the quality of auditing.

Palmorse (1988) defined audit quality in terms of the assurance level. A higher level of assurance with the possibility that the financial statements contain an immaterial misstatement is considered an indication of higher audit quality. The basis of this definition was developed as a result of audit failure i.e. when the auditor fails to detect a material misstatement.

Bradshaw *et al*., (2001) defines audit quality as "the implement of reporting any material misstatements that may materially increase uncertainties or ongoing concern problems".

Duff (2004) suggests that audit quality encompasses both technical and service quality. Technical quality consists of capability, reputation capital, experience and scales of independency. On the other hand, service quality is defined by responsiveness, client services, the provision of non-audit service and empathy. Baotham and Ussahawanitchakit (2009) defined audit quality as the probability that an auditor will not issue an unqualified opinion in his report on statements containing material breach.

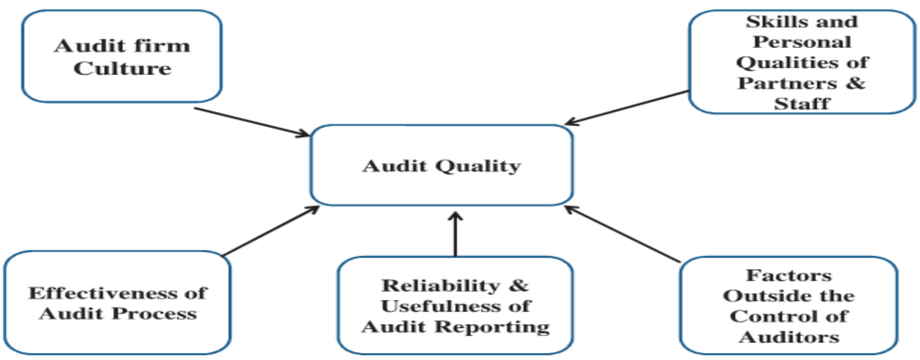
In spite of all prior definitions, Kilgore (2007) claims that there is no specific acceptable definition for audit quality, nor has any single generally accepted measure been introduced.

2.6.2. Audit Quality Framework

Measuring audit quality is problematic; this is because the outcome of audit quality is not directly observable, since it may be influenced by many factors. Wooten (2003) claimed that the independence of both the audit team and firm are essential in audit quality measurement.

Audit firm and audit team factors such as human resources, professionalism, audit processes, supervision, industry expertise and audit planning, contribute directly to the skill and competence of auditors in detecting errors and material misstatements. In addition, the provision of non-audit services, audit fees and audit tenure directly impair auditor independency (Wooten, 2003). The Financial Reporting Council (FRC, 2008) introduced five main drivers for audit quality: (1) the audit firm culture, (2) skills and personal qualities of audit partners and staff, (3) the audit process, (4) usefulness of the audit reporting and (5) factors that are outside the control of the auditors. (See Figure 1)

Figure 1, Audit quality framework



Source: U.K's Financial Reporting Council, (FRC, 2008)

The FRC (2008) claims that corporate governance mechanisms such as audit committees and regulatory requirements can enhance audit quality. An effective audit committee is able to improve audit quality through active interaction and effective communication with auditors during the audit period. Carcello *et al*., (1992) suggested that the most significant factors in determining audit quality were audit team industry expertise and firm experience with the client, compliance with the generally accepted auditing standards (GAAS) and responsiveness to client needs.

There is a great deal of research on audit quality which is a wide field requiring assessment of many proxies including, for example, audit firm size, audit fees, non-audit services fees, industry specialization, audit tuner, auditor litigation and audit team characteristic. The following sections discuss briefly each proxy.

1- Audit firm size

Many studies provide evidence supporting the impact of the audit firm size on audit quality. DeAngelo (1981) considers that larger firms provide better audit quality than smaller firms, since larger firms have more resources and employ better qualified, more highly skilled and competent staff. She argues that audit firm size can be used as a proxy for audit quality. Sori *et al*., (2006) agreed with DeAngelo's claim that bigger audit firms have higher skilled and experienced staff, research facilities and better financial resources than smaller audit firms.

On the other hand, according to Wooten (2003) various researchers theorized that there is no real audit quality difference between large and small firms, but the perception exists because large firms are well known and have gained a reputation for high quality. While Francis *et al*., (1999) claimed that the Big Six auditing firms have excellent reputations and are generally viewed as providing higher audit quality than other firms.

Kilgore (2007) indicated that audit firm size is the most commonly used criterion of audit quality. Moreover Chang *et al*., (2008) agreed with Kilgore because of the considerable amount of theoretical and empirical evidence supporting the view that large audit firms may provide a higher audit quality. In contrast, Lam and Chang, (1994) argued that it is not always the largest auditing firms that provide higher audit quality than the smaller firms.

2- Audit fees

The link between audit fees and audit quality is suggested by reputation hypothesis. (Lindberg, 2001) and there are several studies supporting the existence of a relationship between audit fees and audit quality. According to Craswell *et al*., (1995) and Palmrose (1986) higher audit fees indicate higher audit quality: recognizing that although building the reputation associated with an auditing firm's name and their industry specialization expertise demands a high investment in terms of both time and capital, she argues that it is cost-effective since it results in higher audit fees.

According to Palmrose (1986a: p108), the Big 8 auditors charge higher audit fees either for higher audit quality or monopoly pricing. After substituting the audit fees variable for audit hours, she found that the Big 8 auditors are associated with higher audit quality providers. She stated that "the big eight designation is a quality surrogate, in that increased hours by big eight auditors would reflect greater productive activities (evidence acquisition) in providing higher levels of assurance (higher quality) to clients".

According to Ferguson and Stokes (2002) industry specialist auditors earn additional fees over non-specialist auditors, indicating higher audit quality. In addition DeAngelo (1981) claims that larger audit firms earn higher fees and therefore have more resources to invest when compared with smaller sized audit firms.

3- Non-Audit Services Fees

Providing non-audit services could impair auditor independence as illustrated for instance, by the Enron case which was a real example of such scandalous and fraudulent business practice (Quik and Rasmussen, 2005). Even so, audit firms provide non-audit services (NAS) for their customers because it is lucrative to do so. Walker, (1999) quotes figures showing that 30% to 40% of audit firms' revenue is earned from non-audit services.

The SOX Act of 2002 stated that non-auditing services (NAS) consist of: 1) financial information systems design, implementation and bookkeeping; 2) appraisal services and internal audit services; 3) management functions and

human resources; and 4) broker–dealer services and legal services. Markelevich *et al*., (2005) suggest that providing non-auditing services leads to: lack of independence, lower audit quality, and increases the likelihood of GAAP violations. Code of Corporate Governance in Jordan, (2012:16) states that "the Board of Directors should identify the types of non-audit services the auditor may provide and disclose that".

On the other hand, according to Arruanda (1999) many studies found that there is no association between NAS and audit quality, claiming that providing NAS does not necessarily damage auditor independence, while acknowledging that the provision of NAS reduces total costs. In addition, Lennox (1999) argued that NAS increase auditors' knowledge of their clients and increases the probability of detecting material misstatement. From the auditors perspective there is a positive relationship between audit quality and providing NAS, because providing additional services allows them to gain a better understanding of the client's business processes (Wooten, 2003).

4- Industry Specialization

According to Meyer (2009), industry specialist auditors who have industry specific knowledge will provide better audit quality than non-specialist auditors. This view is supported by Wooten (2003), who assert that audit firms working for multiple clients within the same industry leads to their staff having a higher level of expertise in the processes related to that industry, in

their understanding of common risk factors, weaknesses and problems faced by that specific industry.

Taylor (2000) argued that auditors' knowledge of a client's specific industry has an effect first on the level of audit risk assessment, second on other audit-planning decisions. Auditors who have a higher knowledge and better understanding of the clients' industries are able to measure the levels of audit risk appropriately and to plan their audit strategies; this can help them to predict the potential for misstatements.

In summary, most prior studies indicate that an auditor's industry knowledge is a vital component in the efficiency and effectiveness of audit processes and thus, increases the quality of auditing services.

5- Auditor Tenure

Auditor tenure has been viewed as a proxy of audit quality. The length of the auditor-client relationship can significantly affect audit quality. There is a debate about this proxy centring on two main arguments. The first is that short tenure means an auditor has less knowledge of a client, while the second claims that long tenure may decrease auditor independence and objectivity.

It is worth mentioning that the Code of Corporate Governance in Jordan (2007:p15) prohibits an external auditor from auditing the same client for a period exceeding four years consecutively.

Wooten (2003) indicated that both audit team factors and independence are affected by audit tenure, claiming that both short tenures and very long tenures lead to audit failure. When auditors accept a new client they will need time to become conversant with his business practices, thus increasing auditor susceptibility to missing material misstatements, while long tenure leads to the auditor gaining more understanding of the client's risks and how its system works, so the auditor can adjust audit procedures to detect material misstatements. On the other hand, long tenure with the client has been associated with low audit quality, because long associations have the potential to complacency, lack of accurate audit procedures and high dependence on management representations (Shockley, 1982, Deis and Giroux, 1992).

6- Auditor Litigation

Palmrose (1988) using auditor litigation as a measure of audit quality, found a number of differences between the 'Big' audit firms and 'non-Big' audit firms. Non-Big auditors were more likely to be involved as defendants in audit litigation. Accordingly, a higher (lower) quality auditor is involved in less (more) audit litigation.

In 2002, the accounting firm of Arthur Andersen was liquidated as a result of fraud in the performance of their duties and lack of commitment to professional ethics (Hussein and MohdHanefah, 2013).

7- Audit Team Characteristics

Firms that use a well-designed hiring system, implement a strong control procedure and have industrial experience will likely make a high-quality audit team. Such staff exemplifies a high level of professionalism and are more likely to perform audit tasks to a high standard. Similarly, staff that maintains professional scepticism will not accept insufficient evidence (Wooten, 2003).

Personal qualities and skills of audit partners and staff that may lead to a positive contribution to audit quality are:

1) Audit staff and Partners who understand their clients' business and abide by the principles underlying ethical and auditing standards.
2) Audit staff and Partners who display professional skepticism in their work are competent in dealing with issues that may arise during the audit.
3) Audit staff that perform detailed empirical audit work, have sufficient experience and are appropriately monitored by managers (FRC, 2008).

In summary, most prior studies indicate that an honest, conscientious and professional audit team is a vital component in the efficiency and effectiveness of the audit processes and increases the quality of auditing services.

2.7. Corporate Governance and Audit Quality

According to agency theory, the increase in conflict of interest between principal and agent, will lead companies to choose high-quality auditors (Mahdavi *et al*., 2011). Corporate governance mechanisms are generally not limited to internal control. In fact, external auditor represents the most important external control mechanism (Makni *et al*., 2012).

Depending on Shleifer and Vishny (1997), ownership concentrations increases oversight over managers and improve management performance monitoring and reduce agency costs resulting from the risk of information asymmetry between managers and owners.

Both Niskanen *et al*., (2009) and Mahdav *et al*., (2011) indicated that an increase in the director ownership percentage leads to a reduction of information asymmetry and eliminates the conflict of interest between managers and shareholders. In addition Niskanen *et al*., (2009) argued that an increase in director's ownership decreases the likelihood of engaging a Big-Four auditor.

Abdullah (2008) argues that institutional investors have more influencing power than individual investors. Supporting this finding, Sharma (2004) found that as the percentage of independent institutional ownership increases, the likelihood of fraud decreases. According to these findings therefore, institutional ownership plays a main role in controlling and disciplining

managerial discretion and monitoring the reporting process. Kane and Velury (2004) believe that companies with a high level of institutional ownership are more likely to choose a high-quality auditor.

Jensen (1993) claims that the higher the number of board members, the higher the levels of conflict. In contrast, Pearce and Zhara (1992) suggested that a larger number of board members enhance its control capacity and performance. Fama and Jensen (1983) argue that the board of directors is the best control mechanism to monitor the actions of management and focus on the necessity of board independence according to agency theory. Thus, the presence of more non-executive directors in the board of director will increase the possibility of choosing a high-quality auditing firm (Beasley and Petroni, 2001).

Boards of director with CEO duality are perceived as ineffective because a conflict of interest may arise (Abdullah, 2008). Jensen and Meckling (1976) focus on the reduction of agency costs and improvements in firm performance that can be achieved by the separation of management and control decisions. Makni *et al*., (2012) argues that companies with CEO duality are more likely to engage high-quality auditor.

CHAPTER THREE: LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESIS

CHAPTER THREE: LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESIS

3.1. Introduction

This study aims at investigating the impact of corporate governance mechanisms on audit quality in the Jordanian manufacturing firms listed on ASE. The current chapter consists of two main sections: the review of related literature and the development of the study hypotheses.

3.2. Literature Review

There is an ample amount of literature on relationship between corporate governance including ownership structure and board composition, and audit quality. Moreover, these studies are conducted in developed countries and developing countries like Jordan. The following subsections presents a review of a number of related studies the researcher has access to.

3.2.1. Studies in developing countries

In Jordan, **Al-Omari *et al.*, (2004)** examined audit quality of Jordanian auditing companies using a sample of 86 Jordanian industrial and service companies listed on ASE. The results indicated that the audit quality for companies audited by big audit firms is higher than that of companies audited by small audit firms. They also indicated a significant positive relationship between audit quality and the following factors: financial conditions of the client, client size, and whether the auditing firm has a professional association with or membership of an international auditing firm.

Al-Nawaiseh (2006) examined factors affecting audit quality from the perspective of Jordanian auditors using a sample of 62 auditors. The results of the study indicated that (80.2%) of auditors realized the important role of audit quality. The study also found that the most influenced variables related to audit team work. While the least influenced are those related to audit company.

Abdullah (2008) investigated the impact of corporate governance mechanisms on audit quality by using a sample of 655 Malaysian listed companies for the period 2003. Using logistic regression; the results indicated that board independence and non- financial institutional ownership had a significant relationship with audit firm size. He also found that directors' ownership and CEO duality had a negative, but insignificant, relationship with audit quality. However, non-executive directors' ownership and financial institutional ownership had a positive, but not significant, relationship with audit quality.

Also in Malaysia, **Chin (2008)** examined whether external independent auditors serve the corporate governance mechanism role in reducing the agency problems between the controlling owner and minority shareholders, using a sample of Malaysian listed companies for the year 2007. The results of the study indicated that Malaysian companies with high ownership concentration are more likely to hire a higher quality auditor. The study also found that the low level of earnings is more likely to make auditors avoid long

audit tenure with firms that have more agency problems embedded in their ownership structures.

Adeyemi and Temitope (2010) investigated the impact of corporate governance mechanisms on audit quality using a sample of 58 firms listed on the Nigerian Stock Exchange in 2007. Using logistic regression, the results indicated a significant positive relationship between non-executive director ownership, business leverage and size of company, and audit quality. However, no significant relationship was found between audit committee, CEO duality, managerial ownership, institutional ownership, board independence, and audit quality.

In Jordan, **Zureigat (2011)** investigated the effect of ownership structure on audit quality using a sample of 198 firms listed on the ASE in 2008. Using logistic regression, the study found a significant positive relationship between both foreign and institutional ownership, and audit quality. However, the study found a negative but insignificant relationship between ownership concentration and audit quality. Moreover, the study indicated that companies foreign and institutional investors tend to hire high quality auditors.

Abu Issa (2011) investigated the extent to which auditing firms in Jordan are industry-specialized. She studied a sample of audit firms that provided services to companies listed on the ASE for the period 2003-2007. The results of the study indicated that 60% of auditing firms in Jordan are at least specialized in one industry. It also found that 8% of auditing firms are

specialized in the banking sector, 24% in the insurance sector, 32% in the services sector and 36% in the industry sector.

Mahdavi *et al.*, (2011) examine the effect of corporate governance on the choice of audit firms, using a sample of 109 nonfinancial companies listed on the Tehran Stock Exchange for the period 2004-2008. The results indicated a significant positive relationship between percentage of independent directors and audit quality. The result showed a negative relationship between percentage of institutional ownership and audit quality.

In Tunisia, **Makni, *et al.*, (2012)** examined the impact of corporate governance mechanisms on audit quality, using a sample of 29 Tunisian listed firms for the period 2005-2009. They found that board size, CEO-chairman duality, and the presence of majority shareholders positively affect the demand for higher quality auditors. In contrast, the study found that the presence of institutional investors and customer firm's size negatively affect the demand for higher quality auditors. Moreover, the study found that neither the existence of independent members on the board of directors and ownership by the CEO, nor the level of indebtedness of the audited firm have any effect on the choice of a reputed auditor.

Soliman and Abdelsalam (2012) examined the effectiveness of corporate governance practices and audit quality using a sample of 50 firms listed on the Egypt Stock Exchange for the period 2007-2009. The data was analyzed using logistic regression. The results indicated a significant relationship

between board independence, CEO duality and audit committees, with audit quality. Also, the result showed an insignificant relationship between institutional investor and managerial ownership and audit quality.

Zengin (2013) investigated the association between corporate governance and auditor choice using a sample of 162 firms listed on the Istanbul Stock Exchange (ISE) for the period 2005-2009. He found that board independence, board size and ownership concentration are significantly associated with the choice of Big-4 audit firms. On the other hand, he found that board independence, board size, CEO duality and institutional ownership significantly affect the choice of an industry-specialized auditor. Moreover, he concluded that corporate governance had a relatively higher influence on Big-4 auditor choice compared to industry-specialized auditor choice.

3.2.2. Studies in developed countries

Collier and Gregory (1996) examined whether audit committees are effective in ensuring audit quality, using a sample of 500 companies listed on (Stock Exchange–Micro-Fiche-Services) for the period 1991. Using a questionnaire, the results indicated a significant relationship between the presence of an audit committee and the size of audit firm (audit fees).

Beasley and Petroni (2001) investigated the role of outside members of the board of directors in the choice of external auditor by using a sample of 558 property-liability insurance companies for the period 1991-1992. The result indicated that the likelihood of insurance companies employing a brand name

specialist auditor is increasing with the percentage of the members of the board of directors that are considered outsiders. However, they did not find a significant relationship between board composition and the choice of using a non-specialist brand name (Big 6) auditor and a non-brand name auditor.

Carcello *et al*., (2002) examined the relationship between board characteristics (board independence, expertise and diligence) and audit fees, using a sample of 258 Fortune U.S firms for the period 1992-1993. A questionnaire was used to collect audit fees data. They found a significant positive relationship between board expertise, independence and diligence, and audit fees.

Velury *et al*., (2003) examined the relationship between institutional ownership and audit quality (selection of industry specialist auditors) using a sample consisting of 5,647 firm-year observations (U.S listed firm) for the period 1992-1996. The results indicated a significant positive relationship between institutional ownership and audit quality.

Mitra *et al*., (2007) examined the relationship between ownership characteristics and audit fees, using a cross-sectional least squares regression analysis for a sample of 358 firms listed on (NYSE) audited by the Big Five auditing firms. The found a significant positive relationship between diffused institutional stock ownership (i.e., having less than 5% individual shareholding) and audit fees. Also, it found a significant negative relationship between institutional ownership (i.e. having 5% or more individual

shareholding) and audit fees. Finally, the study found a significant negative relationship between managerial stock ownership and audit fees.

Boo and Sharma (2008) investigated the influence of corporate governance structure on audit process in terms of audit fees using a sample of 357 U.S banks for the period of 2001. They found a significant relationship between audit risk, client size, audit complexity and auditor-related variables with audit fees. They also found a negative relationship between audit committee independence and audit fees.

Lin and Liu (2009) investigated the effect of corporate governance on choosing large audit firms, using a sample of 184 Chinese' listed firms for the period 2001-2004. The result of the logistic regression analysis indicated that firms with a high percentage of majority shareholder and CEO duality are less likely to hire a Top-10 (high-quality) auditing firm.

Guedhami *et al*., (2009) investigated the effects of ownership structure on choosing audit firms using a sample of 176 privatized firms from 32 countries. They found a negative relationship between state ownership and audit quality They conclude that privatized firms worldwide become more likely to employ a Big Four auditor with the extent of foreign ownership. Moreover, they found that the relationship between shareholder equity and auditor choice is stronger when country-level governance institutions are weaker.

Niskanen *et al*., (2009) investigated the relationship between ownership structure and demand for audit quality, using a sample of 478 Finnish' listed firms for the period 2000-2006. They reported a negative relationship between managerial ownership and audit quality. They also found that the probability of choosing a Big4 auditor increases with an increase in firm size and the presence of foreign sales. Finally, they found that an increase in leverage increases the likelihood that the firm will use a Big4 auditor only in the larger firms and in firms where management ownership is above 50%.

Basiruddin (2011) examined the relationship between corporate governance characteristics and audit quality, analyzing a sample of 350 U.K listed firms for the period 2005-2008.The results of the study showed a significant positive relationship existed between the percentage of independent boards of directors and audit quality.

3.3. Study contributions

As indicated in chapter one, the main objective of this study is to examine the relationship between corporate governance and audit quality. A number of proxies are employed in this study to measure audit quality: audit firm size, industry specialist auditor and audit fees, whereas, corporate governance mechanisms cover board composition, ownership structure and the audit committee. It is hoped that this thesis will make several contributions to the field of study:

1) To the best of the researcher's knowledge, no study has used the industry specialist auditor and the audit fees as proxies for audit quality to investigate the relationship between corporate governance mechanisms and audit quality in Jordan.

2) It is worth mentioning that although there have been previous studies on audit quality in Jordan; the issues addressed therein differ from those addressed by the current study. For instance, Al-Omari *et al*., (2004) and Al-Nawaiseh (2006) examined factors affecting audit quality from the external auditor perspective, using a questionnaire. In addition, Abu Issa (2011) investigated the extent of specialization in the auditing sector. Also, these studies did not examine the relationship between corporate governance and audit quality. They focused solely on audit quality. On the other hand, Zureigat (2011) examined the relationship between ownership structure and audit quality. His assessment of audit quality was based on a single proxy, audit firm size. Similarly, he excluded other relevant corporate governance mechanisms such as board composition and audit committee.

3.4. Development of hypotheses

This study focuses on the impact of corporate governance mechanisms on audit quality using three major variables: ownership structure, board composition and audit committee. This study will also examine firm size and

financial leverage as control variables for the relationship between corporate governance and audit quality.

3.4.1. Factors Related to Ownership Structure

Ownership structure is defined as the share of the voting rights among all shareholders (Makni *et al*., 2012). The existing thesis shows three main variables: 1) Ownership concentration, 2) Directors' ownership, 3) Percentage of institutional investor ownership

1- Ownership Concentration

According to Shleifer and Vishny (1997), ownership concentration increases oversight over managers. In addition Helfin and Shaw (2000) claimed that monitoring by large shareholders helps in accessing valuable private and relevant information. In companies with concentrated ownership, the large shareholders can affect management actions, especially when they are also board members. Fan and Wong (2005) stated that the demand of higher audit quality is related positively to the presence of majority shareholders. Moreover various studies such as Abdullah (2008) and Makni *et al*., (2012) reported a significant positive relationship between ownership concentration and audit quality.

By contrast, both Zureigat, (2011) and Zengin, (2013) indicated that firms with a large controlling shareholder (ownership concentration) are less likely to hire high quality auditors. Based on these results, the author proposes a

positive relationship between majority shareholder ownership and audit quality, so the first hypothesis for this study will be:

H1: *There is a significant positive relationship between ownership concentration and audit quality.*

2- Director Ownership

Both Niskanen *et al*., (2009) and Mahdav *et al*., (2011) indicated that an increase in the director ownership percentage leads to a reduction of information asymmetry and eliminates the conflict of interest between managers and shareholders. In addition Niskanen *et al*., (2009) argued that an increase in managerial ownership decreases the likelihood of engaging a Big-Four auditor. Nevertheless, Abdullah (2008) indicated that director ownership has a negative relationship but without significance associated with audit quality.

Various studies such as Makni *et al*., (2012) and Soliman and Abdelsalam (2012) argued that director ownership has no effect on the choice of a reputed auditor. On the other hand, Adeyemi and Temitope, (2010) found that director ownership may increase the quality of audit. Indeed, when managerial ownership is higher, managers will have enough voting power to safeguard their positions regardless of their achievement performance. This can reduce the value of the firm and cause amplification of information asymmetry. In summary, most previous research suggested a negative relationship between

the percentage of capital held by the director and using a higher quality auditor. Thus, our second hypothesis can be formulated as follows:

> **H2**: *There is a significant negative relationship between director ownership and audit quality.*

3-Instituational Ownership

Institutional investors typically include non-individual financial institutions such as banks, insurance companies and mutual funds. Institutional investors have differing objectives based on their relative shares in the equity capital. Results regarding the linkage between the percentage of institutional investors and the demand for higher quality auditors are argumentative (Makni *et al*., 2012).

Abdullah (2008) argues that institutional investors have more influencing power than individual investors. Supporting this finding, Sharma (2004) found that as the percentage of independent institutional ownership increases, the likelihood of fraud decreases. According to these findings therefore, institutional ownership plays a main role in controlling and disciplining managerial discretion and monitoring the reporting process.

Mitra *et al*., (2007) found that institutional ownership has a significantly positive relationship with audit fees. Moreover both Makni *et al*., (2012) and Mahdavi *et al*., (2011) indicated that institutional ownership has a significant negative relationship with audit quality. However Soliman and Abdelsalam, (2012), argued that institutional investors have no significant relationship with

audit quality. In contrast, Zengin, (2013) indicated that institutional ownership have significant impact on audit quality.

Based on these discussions, a positive relationship between institutional ownership and audit quality will be proposed in this study as:

> **H3**: *There is a significant positive relationship between institutional ownership ratio and audit quality.*

3.4.2. Factors Related to Board Structure

The board composition plays a critical role through the firm's corporate governance mechanism (Fama, 1980). The effectiveness of such mechanisms is attributed to three major characteristics: 1) Board size, 2) CEO duality, 3) Board independence (Makni *et al*., 2012)

1- Board Size

According to Lipton and Lorsch (1992) the optimal size for a board should not exceed eight or nine directors. Jensen (1993) claims that the higher the number of board members, the higher the levels of conflict. In contrast, Pearce and Zhara (1992) suggested that a larger number of board members enhance its control capacity and performance. The Code of Corporate Governance in Jordan, (2007: p 6) states, that "The company's board of directors must consist of five members at least and not more than thirteen as determined by the Company policy".

According to Basiruddin, (2011) prior studies have shown that the smaller boards are more effective as a result of better director-to-staff communication, as well as smaller firms being easier to manage. However Makni *et al*., (2012) indicated that board size positively affects the demand for higher quality auditors. Based on these discussions, a positive relationship between board size and audit quality will be proposed as:

H4: *There is* a *significant positive relationship between board size and audit quality.*

2- CEO Duality

The concept of duality exists when one person holds the positions of both chairman of the board and the Chief Executive Officer (CEO). Generally speaking, boards with CEO duality are perceived as ineffective because a conflict of interest may arise (Abdullah, 2008). The separation of the positions of chairman of the board and CEO is highly recommended by a majority of corporate governance systems (Makni *et al*., 2012).

A study carried out by Jensen and Meckling, (1976) focuses on the reduction of agency costs and improvements in firm performance that can be achieved by the separation of management and control decisions. In addition, both Lin and Liu (2009), and Abdullah, (2008) indicated that CEO duality has a negative relationship with audit quality. Soliman and Abdelsalam, (2008) and Zengin (2013) found CEO duality to have a significant relationship with audit quality. In contrast, Makni *et al*., (2012) argues that CEO-Chairman duality

positively affects the demand for higher audit quality. Based on these discussions, the author suggests a negative relationship between CEO duality and audit quality and the fifth hypothesis is therefore:

H 5: *There is a significant negative relationship between CEO duality and audit quality.*

3-Board Independence

Independent directors are defined as persons who have no apparent family ties with those holding power in the company and do not hold any shares in the capital of the company they manage (Makni *et al*., 2012). Fama and Jensen (1983) argue that the board of directors is the best control mechanism to monitor the actions of management and focus on the necessity of board independence according to agency theory. The Code of Corporate Governance in Jordan (2007:p 4), defines an independent board as: "Member of the board of directors which does not bind the Company or any of the staff of the executive management of that or any affiliated company or company auditor of any material interest or any other relationship other than those related to its contribution to the company may exist, in which the suspicion of bringing any benefit, whether material or moral to that member, may lead to influence decisions or abuse his office in the company".

O-Sullivan (2000) and Carcello *et al*., (2002) document a positive relationship between the proportion of non-executive directors on a board and audit quality. Abdullah, (2008) and Mahdavi *et al*.,(2011) also suggested that

increasing the percentage of outside (independent) directors will increase the possibility of choosing a high-quality audit firm. On the other hand, Soliman and Abdelsalam (2012), and Zengin(2013), indicate that board independence has a significant influence on Big-4 auditor choice. In contrast, Makni *et al*., (2012) argued that the existence of independent members on the board of directors has no effect on the choice of a reputed auditor. Based on this discussions, the author suggests a positive relationship between percentage of independent members of the board of directors and audit quality. Therefore the sixth hypothesis will be:

> **H6**: *There is a significant positive relationship between the percentage of independent board of director and audit quality.*

3.4.3. Audit Committee

The audit committee is one of the committees established by the board of directors and whose main responsibility is that of financial reporting. The audit committee is responsible for recommending the selection of an external auditor, ensuring the soundness and quality of internal accounting and control practices, and monitoring the external auditor's independence from senior management (Anderson *et al*., 2004).

According to the Jordanian Code of Corporate Governance (2007: p 8), audit committee is defined as: "a sub-committee of the Board of Directors, to oversee the financial reporting and control and disclosures related to them. The Committee is constituted of non-executive members chaired by a

president from among its members, and should preferably be a member of the Committee of experienced financial, this committee with the ability to draw upon expertise from outside the company to perform its functions".

"The Board of Directors should provide a formal description of the qualifications, efforts, and time commitment expected from committee members and set up committee mandates that address the scope and objective of each committee." (Jordanian Code of Corporate Governance, 2012:11).

"The Board of Directors should establish an Audit Committee to undertake the following: 1) Review financial statements and management commentary 2) Support financial supervision and increased accountability 3) Ensure that management adequately develops and adheres to internal controls and accounting policies 4) Review the Internal Audit Department's conclusions on a regular basis and ensure that management acts upon the Internal Audit Department's recommendations diligently. 5) Ensure compliance with applicable regulations. Finally 6) recommend the External Auditor for appointment." (Jordanian Code of Corporate Governance, 2012:11). The External Auditors shall be accountable to report directly to the Audit Committee or the Board, detailing any detected fraud or serious suspicions of fraud.

Abbott *et al*., (2004) state that the ideal average size of an audit committee is between 3 and 4 member. Mitchell *et al*., (2008) suggested that interaction between external auditors and the audit committee can potentially improve the

quality of information provided to the stakeholders. Soliman and Abdelsalam (2012) also indicate that the existence of an audit committee has a significant relationship with audit quality. Although, Adeyemi and Temitope, (2010) argued that the audit committee has no effect on audit quality. Based on these discussions, the author suggests a positive relationship between the existence of an audit committee and audit quality, thus providing the seventh hypothesis:

H7: *There is a significant positive relationship between the existence of audit committees and audit quality.*

CHAPTER FOUR: METHODOLOGY

4.1. Introduction

4.2. Sample and population

4.3. Source of data

4.4. Definitions and measurement of variables

4.4.1. Dependent variables

4.4.2. Independent Variables

4.5. Regression models

4.6. Data analysis

CHAPTER FOUR: METHODOLOGY

4.1. Introduction

This chapter presents the methodology used to test the study hypotheses which were developed in the previous chapter. It describes the population of the study, the selection of the sample and the source of data. The chapter also outlines the definitions of the variables and their measurements. In addition, the regression models used by the study to examine its hypotheses are outlined and discussed.

4.2. Population and Sample

The population of the study includes all manufacturing companies listed on the ASE. A total of 75 companies were listed on the ASE at the end of 2012 (ASE, 2013). However, the sample of the study includes the companies that meet the following criteria:

- The firm should be traded on the ASE during 2012.
- The data needed to measure the variables of the study are available.

Applying these criteria resulted in a sample composed of 63 firms.

4.3. Source of data

The data were collected from companies' (2012) annual reports and Amman Stock Exchange (ASE) web site.

4.4. Definition and Measurement of Variables

4.4.1. Dependent variables (Audit Quality)

As motioned in chapter two, the measurement of audit quality is problematic and still lacks consensus among researchers (Wooten, 2003). Several previous studies used audit firm size (big4\non-big4) as a proxy for audit quality (Beasley *et al*., 2001, Velury *et al*., 2003, Abdullah, 2008, Niskanen *et al*., 2009 and Zureigat, 2011). In addition, some studies used other variables to measure audit quality. For instance, Makni, *et al*., (2012) and Basiruddin, (2011) used auditor's industry specialization as a proxy of audit quality. Collier and Gregory (1996) use audit fees as a proxy for audit quality. With the objective to provide a good coverage of the topic, the current study uses all the three measures (audit firm size, specialist auditor and audit fees) as proxies for audit quality. (See Table 4-1)

Table 4-1
The proxies, definitions, and labels for dependant variables

Proxy	**Definition**	**Label**
Audit firm size	A dummy variable which equal 1, if the Audit firm is Big 4 audit firm and 0 otherwise.	AFS
Industry specialist auditor	The proportion of industry audit fees (audit revenue) audited by an individual accounting firm relative to the total audit fees for all companies in that industry.	ISA
Audit Fees	Total audit fees paid to the Audit firm.	AFE

4.4.2. Independent Variables

Seven independent variables are used in the study. These variables are: ownership concentration, director ownership, institutional ownership, board size, CEO duality, board Independence and audit committee. (See Table 4-2)

Table (4-2) provides information about the independent variables used by the study and their measurements.

Table4-2
The definitions, proxies, and for the independent and control variables

Variable	**Definition/Proxy**	**Label**
Ownership Concentration	The percentage of shares owned by shareholders who own more than 1% of equity capital.	OWC
Director Ownership	The total number of shares owned by board of directors divided by total number of shares outstanding.	DWO
Institutional Ownership	The percentage of shares owned by institutional investors.	IOW
Board Size	The number of directors on the board.	BOS
CEO Duality	A dummy variable which equal 1 if the CEO is the chairman of the board, or 0 otherwise.	CED
Board Independence	The percentage of non-executive directors on the company's board.	BOI
Audit Committee	A dummy variable which equal, 1 if the company has an audit committee, or 0 otherwise.	ACO
Firm Size	The log of total assets of the company.	FIS
Financial leverage	Total debt divided by total assets	FIL

4.5. Regression Models

The following are the multiple regression models employed by the study to examine its hypotheses.

Model 1: $AFS= \beta_0 + \beta_1\ OWC+ \beta_2\ DWO+ \beta_3\ IOW+ \beta_4\ BOS+ \beta_5\ CED+\beta_6\ BOI+ \beta_7\ ACO+ \beta_8\ FIS+ \beta_9\ FIL + u$

Model 2: $AFE= \beta_0 + \beta_1\ OWC+ \beta_2\ DWO+ \beta_3\ IOW+ \beta_4\ BOS+ \beta_5\ CED+\beta_6\ BOI+ \beta_7\ ACO+ \beta_8\ FIS+ \beta_9\ FIL + u$

Model 3: $ISA= \beta_0 + \beta_1\ OWC+ \beta_2\ DWO+ \beta_3\ IOW+ \beta_4\ BOS+ \beta_5\ CED+\beta_6\ BOI+ \beta_7\ ACO+ \beta_8\ FIS+ \beta_9\ FIL + u$

Where:

AFS	Audit firm size (measurement of audit quality)
ISA	Industry specialist auditor (measurement of audit quality)
AFE	Audit fees (measurement of audit quality)
OWC	Ownership Concentration
DWO	Director Ownership
IOW	Institutional Ownership
BOS	Board Size
CED	CEO Duality
BOI	Board Independence
ACO	Audit committee
FIS	Firm Size
FIL	Financial Leverage
u	Error term, $(0, \sigma^2)$
B_k	Regression coefficients

4.6. Statistical Techniques Used

Appropriate statistical techniques are used to test and analyse the data. These include: descriptive statistics, binary logistic regression, multiple regression and Kolmogorov-Smirnov test.

CHAPTER FIVE: DATA ANALYSIS AND HYPOHTESES TESTING

5.1. Introduction

5.2. Descriptive analysis

5.2.1. Dependant Variables

5.2.2. Independent Variables and Control Variables

5.3. Regression analysis and Hypotheses testing

5.3.1 Normality and Multicollinearity

5.3.2. Empirical results of the regression analysis

CHAPTER FIVE: DATA ANALYSIS AND HYPOHTESIS TESTING

5.1. Introduction

This chapter present the descriptive statistics of the variables included in the study, the results of the regression models and testing the hypotheses of the study.

5.2. Descriptive analysis

This section presents the descriptive statistics of all variables used in the current study using the mean, standard deviation and range.

5.2.1. Dependant Variables

Table (5-1)
Summary of Dependent Variables

Auditing firm	Number		Percentage	
Big 4	19		30.2%	
Non-Big4	44		69.8%	
Total	63		100%	
	Min	Max	Mean	S.D
Audit Fees	2320	103000	14451	19291
Auditor specialization	2%	17%	10%	.05108

Table (5-1) provides summary descriptive statistics about the dependent variable. As seen in Table (5-1), almost 30% of the sampled companies are audited by big four firms. On average the sample company paid JD 14,451 as audit fees. It can be noted that there is a great deal of variation of audit fees between companies as reflected by a relatively high standard deviation.

Finally, the percentage of audit specialization ranges from 2% to 17% with an average of 10%.

5.2.2. Independent Variables and Control Variables

Table (5-2) below provides descriptive statistics for the independent variables. As seen in Table (5-2a), the majority (or 90%) of the sampled companies do not have duality. In addition, almost 92% of the board members are non-executive. Similarly, almost 75% of these companies have audit committees. Accordingly, boards of directors in manufacturing Jordanian companies can be described as being highly independent.

Table (5-2a)
Summary descriptive statistics for the independent variables

	Number	Percentage
Duality	6	9.5%
No-Duality	57	90.5%
Total	63	100%
	Number	Percentage
Existence of AC	47	74.6%
No-AC	16	25.4%
Total	63	100%

The Table (5-2b) shows board size range between 4-13 members with an average of approximately 8 members. This indicates the manufacturing Jordanian companies are abiding by the Code of Corporate Governance. Moreover, manufacturing Jordanian companies are characterized by high ownership concentration (78%) and high institutional ownership (46%). A sampled company varies their size with an average total asset of 87632604

JD. Finally the companies have average debt ratio of (35%). This implies that debt is not the first choice for manufacturing Jordanian companies to finance their activates.

Table (5-2b)
Summary descriptive statistics for the other independent and control variables

	Min	Max	Mean	S.D
Board Size	4	13	7.86	2.30
BOD Ownership	14%	99%	49.66%	0.27
Ownership Concentration	24%	99%	77.36%	0.173
Institutional Ownership Ratio	0%	99%	45.76%	0.245
Independent Board	40%	100%	91.73%	0.108
Firm Size	1,167,703	1,534,883,696	87632604	264608189
Financial Leverage	0.64%	93.26%	34.98%	0.227

5.3. Regression Analysis and Testing Hypotheses

5.3.1 Normality and Multicollinearity

An important part of the use of regression analysis is to establish that certain assumptions underlying its use are not significantly violated. One of the assumptions is that the variables are normally distributed so. To investigate this, a Kolmogorov-Smirnov test for normality was used and confirmed that all variable do not deviate significantly from normality.

Another problem which often arises in conducting multiple regression analysis is the presence of multicollinearity between independent variables. This occurs when two or more exogenous variables are highly correlated

which makes it difficult to determine the individual contribution of each variable to the prediction of the dependent variable (Barrow, 1988). During the multiple regression procedure, multicollinearity was assessed by the variance inflation factor (VIF). Gujarati, (2003) suggested that if the VIF of a variable is greater than 10, then the variable is considered highly collinear. In the current study, the VIF for the variables investigated were well below the accepted levels suggested by Gujarati, (2003) as shown in Tables (5-4) and (5-5).

The first model is the Binary Logistic Regression analysis makes no assumptions about the distributions of the predictor variables, so no need to test the assumption of multiple regressions in first model like, for instance, normality (Field, 2005).

5.3.2. Empirical results of the regression analysis and testing hypotheses

5.3.2.1 Result of the regression analysis of the first model (Audit firm size)

The binary of logistic regression was used to predict (Audit firm size) a dummy variable from a set of predictor variables. As shown in the previous section this type of analysis doesn't need to test some assumption of multiple regressions. Table (5-3) provides the results of the binary logistic regression analysis.

A logistic regression analysis was conducted to predict audit firm size for 63 manufacturing Jordanian companies using Big-4 auditing firm and Non-Big 4 auditing firm as predictors (Audit firm size). A test of the full model against a

constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between companies audited by big-4 and companies audited by Non-big 4(chi square = 24.607, $p < .003$ with $df = 9$).

Nagelkerke's R of .458 indicated a moderately strong relationship between prediction and grouping. Prediction success overall was 81% (88.6% for Non-big 4 and 63.2% for big 4).

The Wald criterion demonstrated that only institutional ownership made a significant contribution to prediction (Sig = .014). EXP (B) value indicates that when the percentage of institutional ownership is raised by one unit (one percent) the odds ratio is 314 times as large and therefore companies are 314 more times likely to hire reputed auditing firm(Big-4). Larger audit firms provide better audit quality than smaller firms. This because larger audit firms have more resources and employ better- qualified, highly skilled, and competent staff (DeAngelo, 1981). This means that there is a significant positive relationship between the percentage of institutional ownership and audit quality in manufacturing Jordanian companies listed on the ASE. Thus, H3 is supported and significant and can be accepted. This result is consistent with Velury *et al*., (2003), Abdullah (2008) and Zureigat (2011). Can be explained attributes that institutional investors have more influencing power than others investor (Abdullah, 2008). Sharma *et al*., (2004) argues firms with a high percentage of institutional investor's ownership lead to reduce the

likelihood of fraud. In addition institutional investors play a critical role in monitoring and control.

Table (5-3a) Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	52.530	.323	.458

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-.840-	.275	9.358	1	.002	.432

Classification Table (5-3b)

			Predicted		
			Auditing Firm Size		Percentage Correct
	Observed		Non-Big 4	Big 4	
Step 1	Auditing Firm Size	Non-Big 4	39	5	88.6
		Big 4	7	12	63.2
	Overall Percentage				81.0

Table (5-3c)
Summary of multiple regression analysis (Model 1)

Model 1	B	Wald	Sig.	Exp(B)
Board size	.126	.321	.571	1.134
Directors ownership	-1.867-	.461	.497	.155
Ownership concentration	1.390	.156	.692	4.014
Institutional ownership	5.750	6.032	**.014**	**314.347**
Audit committee	-.868-	1.023	.312	.420
Independent board	3.796	.552	.458	44.513
CEO duality	.224	.022	.882	1.252
Log of total assets	.821	1.301	.254	2.272
Financial leverage	-1.475-	.832	.362	.229
Constant	-13.406-	2.463	.117	.000

With regard to the other independent variables Table (5-3c), there are statistical insignificant relationship between ownership concentration, director ownership, board size, CEO duality, independent board of director, and existence of audit committee and audit quality measured by audit firm size at the .05 level. Thus, H1, H2, H4, H5, H6 and H7 are rejected.

5.3.2.2 Result of the regression analysis of the second model (Audit fees)

The OLS regression was used to investigate the relationship between corporate governance and audit fees as a dependant variable.

According to Table (5-4), the general model has an adjusted R^2 of 0.610. This means that the model explains 61% of the audit quality in manufacturing Jordanian firms. Furthermore, the high probability of the F statistic (.000) indicates that that the null hypothesis that all coefficients = 0 can be rejected. This means that the independent variables are jointly significant in explaining the audit quality. However, not all independent variables have statistically significant coefficients. Table (5-4) provide the results of the regression analysis.

Depending on Table (5-4), the percentage of institutional ownership has a significant positive relationship with audit quality measured by audit fees with (β= 2.063, *Sig* = .044). This means that there is a significant positive relationship between the percentage of institutional ownership and audit quality in manufacturing Jordanian companies listed on the ASE. Thus, companies with a large percentage of institutional investors are more likely to

hire a high quality auditing firm (higher audit fees). This result supports the result of model 1 and is consistent with Mitra *et al.*, (2007). Big auditing firms charge higher audit fees and provide higher audit quality (Palmrose, 1986a). Thus, H3 is supported and significant and can be accepted. Furthermore, the log of total assets has a highly significant effect on audit quality measured by audit fees. This means that larger company tend to hire high-quality auditors.

Table (5-4)
Summary of multiple regression analysis (Model 2)

Multiple R 0.817				
R^2 0.667	*F* 11.784			
R^2 *(adj.)* 0.610	*Sig. F = .0000*			
Model 2	B	Sig	Tolerance	VIF
(Constant)	2.978	.004		
Board of Directors	-.494-	.624	.533	1.876
BOD Ownership percentage	-1.208-	.233	.363	2.755
Ownership Concentration	-.018-	.985	.462	2.164
Institutional Ownership	2.063	**.044**	.529	1.892
Audit Committee	-1.567-	.123	.888	1.126
Board of Directors Independence	.669	.507	.803	1.246
CEO Duality	-.077-	.939	.817	1.224
Log of Total Assets	7.482	**.000**	.605	1.654
Financial Leverage	-.368-	.714	.745	1.342

With regard to the other independent variables Table (5-4), there are statistical insignificant relationships between ownership concentration, director ownership, board size, CEO duality, independent board of director, and existence of audit committee with audit quality measured by audit fees at the .05 level. Thus, H1, H2, H4, H5, H6 and H7 are rejected.

5.3.2.3 Result of the regression analysis of the third model (Auditor specialization)

The OLS regression was used to investigate the relationship between corporate governance and auditor specialization as a dependant variable. According to table (5-5), the general model has an adjusted R^2 of 0.118. This means that the model explains almost 12% of the audit quality in manufacturing Jordanian firms. However, not all independent variables have statistically significant coefficients; only one variable have statistically significant relationships with the audit quality.

Depending on Table (5-5), indicates a statistically significant relationship at the .05 level between existence of audit committee and audit quality (Auditor specialization) with (*Sig* = .034). However, the direction of the relationship is negative. Thus, H7 is rejected .This means that companies with audit committees are less likely to hire an industry specialist auditor. This is surprising. As mentioned in chapter three, the audit committee is responsible for recommending the selection of an external auditor, ensuring the soundness and quality of internal accounting and control practices, and monitoring the external auditor's independence from senior management (Anderson *et al*., 2004). Moreover, the interaction between external auditors and the audit committee can potentially improve the quality of information provided to the stakeholders (Mitchell *et al*., 2008). For these reasons the existence of audit committee sholud improves the quality of audit. In addition the industry specialist auditors who have industry specific knowledge will provide better

audit quality than non-specialist auditors. This result may suggest that the board of directors should pay more attention to the selection of the audit committee since its work as a liaison between internal and external auditors. The members of this committee should have relevant experience in accounting and finance.

Table (5-5) presents the results of the regression analysis.

Table (5-5)
Summary of multiple regression analysis (Model 3)

Multiple R 0 .496	*F* 1.925			
R^2 0.246				
R^2 *(adj.)* .118	Sig. F = .068			
Model 3	B	Sig	Tolerance	VIF
(Constant)	-.894-	.375		
Board of Directors Size	.611	.544	.533	1.876
BOD Ownership percentage	-1.090-	.281	.363	2.755
Ownership Concentration	1.762	.084	.462	2.164
Institutional Ownership Ratio	-.575-	.568	.529	1.892
Audit Committee	-2.179-	**.034**	.888	1.126
Board of Directors Independence	-.419-	.677	.803	1.246
CEO Duality	-1.204-	.234	.817	1.224
Log of Total Assets	2.902	**.005**	.605	1.654
Financial Leverage	-.465-	.644	.745	1.342

Table (5-5) shows company size has a significant positive relationship with auditor specialization with (β= 2.902, *Sig* = .005). This means that larger companies are more likely to hire high-quality specialist auditor. Moreover, ownership concentrations tends to be significant at 10% level (β=1.762, ρ= .084). This means that companies with a high ownership concentration are

more likely to hire auditors who have a higher knowledge and better understanding of the clients' industries (industry specialist auditor).

With regard to the other independent variables in Table (5-5), there are statistical insignificant relationships between ownership concentration, director ownership, institutional ownership, board size, CEO duality and independent board of director with audit quality industry measured by industry specialist auditor at the .05 level. Thus, H1, H2, H3 H4, H5 and H6 are rejected.

Table (5- 6) Shows a summary of hypotheses testing

Table (5-6)
Summary of testing hypotheses

		Audit firm size (Model 1)	**Audit fees (Model 2)**	**Auditor specialization (Model 3)**
H1	Ownership Concentration	Rejected	Rejected	Rejected
H2	Director's Ownership	Rejected	Rejected	Rejected
H3	Institutional Ownership	**Accepted**	**Accepted**	Rejected
H4	Board Size	Rejected	Rejected	Rejected
H5	CEO Duality	Rejected	Rejected	Rejected
H6	Independent Board	Rejected	Rejected	Rejected
H7	Audit Committees	Rejected	Rejected	Rejected

CHAPTER SIX: CONCLUSIONS

6.1. Introduction

6.2. Summary of research results

6.3. Conclusions

6.3. Implications and Recommendations

CHAPTER SIX: CONCLUSIONS

6.1. Introduction

This chapter summarizes the study and presents its main findings. The chapter also provides the conclusion and recommendations.

6.2. Summary of the study results

This study examined the impact of corporate governance mechanisms on audit quality for a sample of 63 manufacturing companies listed on the ASE. To achieve the objectives of the study, multiple regression analysis was used.

Results of the study revealed the following:

1. The majority (90%) of the manufacturing Jordanian companies do not have duality between the CEO and the chairman of the board.
2. Almost 92% of the board's members in the manufacturing Jordanian companies are non-executive.
3. 25% of manufacturing Jordanian companies do not have audit committees.
4. Companies having an audit committee are less likely to hire a high quality industry- specialist auditing firm.
5. Companies with a high percentage of institutional ownership are more likely to hire Big-4 auditing firm.
6. A significant positive relationship is indicated between the percentage of institutional ownership and audit fees.

6.3. Conclusions

1. Boards of directors at manufacturing Jordanian companies are highly independent.

2. A quite number of manufacturing Jordanian companies are not realizing yet, the importance of having an audit committee.

3. To protect their large stake in the manufacturing Jordanian companies, institutional owners have a great influence on selecting one of the big-4 auditing firms as an external auditor.

6.4. Implications and Recommendations

1. Regulators need to encourage manufacturing Jordanian companies for more compliance with corporate governance code.

2. Manufacturing Jordanian companies need to pay more attention when formulating audit committees, and ensure that audit committees include members with a good experience and knowledge in financial and accounting practices.

3. Future research, on audit quality may use other proxies to measure audit quality such as, non-audit services fees, auditor tenure, auditor litigation, and audit team characteristics.

4. Future research can investigate at the determinants of audit quality in other business sectors.

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